

CHAPTER 8

CURBSIDE PICKUP PROGRAM

- Primary program:** One of the primary methods used by jurisdictions to remove material after a disaster is a curbside waste pickup program. Cities and counties implement curbside pickup programs to remove debris from the street after businesses and homeowners have placed the materials in front of the property.
- Plan ahead:** Immediately following a disaster, such as a flood or earthquake, the material removed from the street via a curbside pickup program tends to be commingled.
- The initial response to a disaster is to remove the material that poses both a threat to health and safety and prevents access to structures and property. It is unlikely that much of this material will be diverted and recycled unless the local jurisdiction has prepared adequately and implemented a disaster plan with all elements necessary to address the barriers to waste diversion.
- Flexible plan:** A disaster plan must be flexible. Any plan, no matter how well thought out, must be amended at some point in the process. Therefore, those who implement the cleanup must periodically review the operation and be willing to address shortcomings or unforeseen changes in either scope or implementation. Planning is imperative, but no one can anticipate all possible scenarios in addressing a disaster cleanup.
- Contents:** In any curbside pickup program, there are some basic requirements and resulting steps that need to be addressed and implemented. Those steps are listed below followed by a short discussion. A number of steps are integral to any debris management program in general, and as such, specific discussions are contained in either Chapter 2, Pre-disaster Assessment, or Chapter 3, Debris Management Programs. However, the action steps are listed in sequence.

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Also refer to Chapter 17 for case studies on curbside collection programs established by the Cities of Los Angeles and Santa Clarita in response to the 1994 Northridge Earthquake.

☐ **STEP 1: QUANTIFY/QUALIFY MATERIAL**

Estimate types and quantities:

It is useful to estimate the types and amounts of material that may result from a disaster in order to determine potential processing and transportation needs.

However, accurate quantification is probably impossible to obtain until after a disaster strikes. It is generally more valuable to a local jurisdiction to estimate the types of material rather than quantities prior to a disaster in order to determine processing needs and abilities in the area.

Major waste categories:

A general conclusion can be drawn from various studies that have documented the composition of demolition waste. The major waste categories tend to be masonry (concrete, asphalt, brick, rubble), wood, gypsum, and metals.

Pilot program:

In some cases, a pilot program can be tested in the area, but that is only feasible if long-term cleanup operations are expected such as those that occurred in the Los Angeles area following the Northridge earthquake.

Waste stream changes:

A good curbside pickup program will also recognize that the types and amounts of material will change as time progresses.

After the initial debris has been removed, to restore some form of order to the area, local residences and businesses will begin to rebuild. The rebuilding process will generate new flows of material as a result of both demolition and construction activities well beyond the immediate cleanup following a disaster. These activities will also generate wastes that can be more easily segregated, which may allow higher rates of recycling.

There will also be materials generated immediately after the disaster such as plastic drinking water bottles, plastic sheeting, sand bags, and food. The City of Malibu had thousands of sand bags to dispose of after the fires in 1993, and there were thousands of plastic drinking water bottles to deal with after the initial Northridge earthquake response.

☐ **STEP 2: DETERMINE PROCESSING AND FACILITY NEEDS**

Identify operations: As stated above, part of material qualifying/quantifying is to determine current processing abilities and potential future needs. At a minimum, jurisdictions should identify operations currently in the area that process construction and demolition waste and potentially those operations that could process those materials in the future. Document these facilities, their locations and processing capabilities. Make a note if any of these facilities have concrete crushers or tub grinders.

Landfills: In addition to processors, note which landfills in the area are practicing material separation on site as well as any other material recovery facilities in the area. These facilities, in addition to having the ability to process disaster debris, could potentially serve as storage sites and should be identified. These sites could be used for intermediate staging and potentially short-term processing following a disaster.

Recycling options: Also consider your options as far as recycling and disposal sites is concerned. If your recycling facility or landfill is (damaged) closed due to the disaster or the routes to the facilities are blocked, have plans to utilize other facilities operated by neighboring jurisdictions.

It is best to have completed these discussions and reached agreement before the disaster since it might take action by your respective City Council/Boards of Supervisors to authorize the use of these facilities; if not done beforehand, valuable time can be lost in negotiating their use.

See page: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 3: DETERMINE LABOR/EQUIPMENT NEEDS**

Estimate needs: Estimating equipment and labor needs, prior to a disaster occurring, with any accuracy is nearly impossible. However, it is very useful to determine what equipment is currently available that can be used in response to a disaster.

Mutual aid: Furthermore, if it has been determined that the available equipment will likely be inadequate, the local jurisdiction may want to consider entering into a mutual aid agreement with neighboring jurisdictions to supply personnel and equipment in the event of a disaster. A model mutual aid agreement is contained in the following attachments in this section (refer to Chapter 7, Mutual Aid, for more information).

EMMA: A new program established by the Office of Emergency Services during the Northridge earthquake recovery is the *Emergency Managers Mutual Aid* program. Through this program experienced emergency managers from public agencies will be available to assist jurisdictions in recovery operations, such as setting up debris management programs.

Local businesses: The local jurisdiction may also consider documenting the local businesses that are involved in the demolition as well as waste transport and handling operations. If manpower needs arise, as a result of a disaster, these businesses may be available on a contract basis.

The City of Los Angeles concluded that utilizing the resources of existing businesses would be the quickest route to implement a curbside pickup program as well as help establish a waste separation and recycling infrastructure that would be in place after the rebuilding period passed.

CCC and EDD: Another option that jurisdictions may consider for manpower needs is to utilize the resources of the California Conservation Corps (CCC) or the Employment Development Department (EDD).

While both the CCC and EDD may be a source of manpower for a community recovering from a disaster, they should both be considered long-term options rather than avenues for

immediate manpower needs following a disaster. Negotiating a contract for personnel from either agency will take time; consequently, this should not be considered a viable option in the primary response to a disaster.

Liability:

There are also liability issues to consider when using volunteers or staff from the CCC or EDD. They may be injured or damage private property during the course of their cleanup activities. See Attachment B for sample waiver forms.

See page: Refer to Chapter 2, Pre-disaster Assessment for more information.

☐ **STEP 4: SECURE FUNDS FOR PROGRAM**

Secure funds:

Plan ahead and secure funds. The most important part of a successful curbside collection program is pre-planning. Planning is necessary if the program is to be implemented in a timely manner, and funding is necessary if it is to be implemented at all.

Even if the program is eligible for reimbursement from a federal program such as FEMA, the FEMA reimbursement will not occur immediately. There needs to be some sort of funding mechanism in place until reimbursement occurs.

Note: FEMA may/will not reimburse for donated monies or services.

See page: Refer to Chapter 6, Reimbursement, for more information.



STEP 5: DETERMINE METHOD TO LOCATE CURBSIDE WASTE

Locate waste:

Regardless of the method used, the jurisdiction should determine how it plans to assess the amounts and types of material placed on the curbside for pick-up.

Site identification: A discussion of Geographic Information System (GIS) versus canvassing the streets is contained in the discussion below titled "Site Identification."

Example:

The City of Los Angeles chose to send out staff with maps to mark the streets that had rubble to be hauled. The City determined this was the most effective method to maximize the cleanup crews' time and transporters' hauling capacity as well as to minimize tip fees by transporting source separated material. Others may choose to use more sophisticated methods such as GIS. Either method will maximize equipment and resources when collecting the debris.

Scout: neighborhoods:

Scout neighborhoods. The City of Los Angeles stressed that it is extremely important to identify the types and locations of debris piled up in the streets prior to dispatching crews to collect it.

This allows for consolidation of similar types of debris (i.e. wood, aggregate, metal, wallboard, insulation) so that full loads of like material can be brought to source separated processing stations, thus minimizing transportation and disposal costs and increasing the likelihood that the materials will be recycled.

Debris identification:

Debris identification can be accomplished in various ways. In hilly areas the City of Los Angeles scoped the neighborhoods using City staff contractors and marking types of materials and locations on a map. Some contractors will do this prior to dispatching crews, but not necessarily. This is probably something that should be negotiated in the contract.

Although the City of Los Angeles chose to blanket the neighborhoods with mobile crews, a GIS could also be used for identifying locations. Regardless of the method, the

primary goal is to maximize capacity of the cleanup crews while collecting as much similar types of debris as possible.

CURBSIDE PICKUP SITE IDENTIFICATION

Background:

When implementing a curbside pickup program following a disaster, planning is imperative to maximize the resources available. Regardless of the method used, some preliminary field work is needed to ensure that similar loads of debris, as well as full loads of materials, are transported to recycling and disposal facilities. To accomplish the preliminary site mapping, two approaches can be taken.

They are as follows:

1. GIS MAPPING

A global information system (GIS) can be used to map out a targeted area and pre-plan material pickup schedules to maximize both resources and equipment. In its simplest application a GIS is used to electronically collect the attributes of a site in a hand-held controller.

The system's software then determines a three-dimensional Global Positioning System position for you. Various software packages can compile the information in numerous fashions which best fit the needs of your organization.

Pros/cons

The advantages of GIS is that it is quick, offers the ability to evaluate the data in several forms, and offers several competing forms of software and hardware.

The disadvantages include the need to purchase/lease the software and hardware and the need to still go out into the field to identify the pickup locations.

Furthermore, depending on the system, additional time may be needed to learn the system before it can be adequately implemented.

However, if a local agency already has a GIS, or if there is a potential need for one in the future, implementing a GIS for curbside pickups in response to a disaster may be justified.

2. CANVASING STREETS

Identify on map

An alternative to using a GIS is to have staff canvas the streets and identify the types of materials in the area to increase source separated recycling opportunities. Locations of material piles can be marked on a map. This information can be used to determine crew size, pickup routes as well as primary disposal and recycling locations. These would be developed before the disaster.

The City of Los Angeles chose this method over GIS. The City felt that the learning curve for the GIS that they had would take too long. The City preferred to dedicate the time towards immediate cleanup efforts.

Advantages

The advantages to canvassing the streets are:

- ◆ immediate results,
- ◆ almost no learning curve,
- ◆ avoided cost of a GIS, as well as the fact that
- ◆ the staff must patrol the streets even with a GIS to locate the material piles.

Decision factors

An individual jurisdiction must decide which method to use to identify locations for curbside pickups. The decision is based on various factors including:

- ◆ cost,
- ◆ availability of systems,
- ◆ response time,
- ◆ size of area, and
- ◆ future needs.

Regardless of which method is chosen, it is extremely important to plan pickup locations and routes to minimize resources and disposal costs and to maximize reuse of materials.

☐ **STEP 6: DETERMINE METHOD OF IMPLEMENTATION**

Who will implement: This portion of the program has several aspects. The jurisdiction must determine who will implement the program: the local government employees, or contracted private businesses.

Materials to collect: Next, the type of material collected must be determined. This will determine the markets and facilities needed to process the materials.

Will commingled waste be collected or only source separated waste? Commingled waste requires additional labor and time to separate the materials, which can add significantly to the cost of and length of time to operate the program.

The City of Los Angeles collected all waste at the curb, but indicated that if this program were implemented again, it would require the waste to be separated by type at the curb if the City was to pick it up at no cost. The City of Santa Clarita implemented its program in this fashion with great success.

Source separate: Consider collecting only source separated material at the curb. Although the City of Los Angeles did not institute this requirement in its curbside pickup program, staff indicated that source separation is something they would require in future disaster cleanups.

The City of Santa Clarita imposed this requirement during cleanup of its earthquake debris and made it work. This would require extensive notification that only source separated material would be collected for free. Mixed material could be tagged, and if not removed by the owner within a given time period, be collected for a fee. This could significantly reduce disposal costs, as the majority of materials could go to source separated processing facilities.

Segregate waste: Dedicate resources towards segregating waste at curbside prior to commingling during collection. The City of Los Angeles initially collected waste, as is, at the curbside. Unfortunately, a small amount of contamination, such as wood in a pile of concrete rubble, would require the entire

load to go to a mixed waste disposal facility or recycling facility. The resulting tip fee would be considerably more than that at a segregated processing facility.

The City then began using crews to pick through piles of debris that had slight commingling of waste to produce individual piles of separated waste that could be hauled to source separated facilities at a reduced disposal cost.

Suggestion: Any jurisdiction that is considering using this type of manpower should investigate the potential use of crews from the California Conservation Corps (CCC) or the Employment Development Department (EDD).



STEP 7: IDENTIFY TEMPORARY STORAGE AREAS

- ◆ Determine need for temporary storage areas
- ◆ Develop criteria for siting temporary storage or pre-staging areas.
- ◆ Make a list of all possible sites: public and private
- ◆ Consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency.
- ◆ Identify permit and environmental compliance requirements and time needed to process.
- ◆ Decide the type and level of environmental assessment and monitoring needed to be performed at site.
- ◆ Negotiate in advance the use or lease of public or private land.
- ◆ Develop Site Operation Plan.
- ◆ Develop Site Restoration Plan.

More information: Refer to Chapter 4, Temporary Storage Sites, for information.

☐ **STEP 8: IDENTIFY/ESTABLISH MARKETS FOR COLLECTED MATERIALS**

Identify end-uses and markets:

- ◆ Determine end-uses and market specifications for disaster debris.
 - ◆ List the local brokers and processors, materials they handle, and end-uses.
 - ◆ Identify market specifications for the selected end-uses.
 - ◆ Identify processing requirements for selected end-uses.
- ◆ Identify potential markets.
 - ◆ List the existing markets.
 - ◆ If located in or near a Recycling Market Development Zone, list the recycling businesses within the Zone, the secondary materials they accept and process, and the end-products.
 - ◆ List local, state, and national waste exchanges available.
 - ◆ Identify potential projects within your city/county programs for materials collected (e.g., parks, public works).
- ◆ Identify markets still needed after evaluating existing, available markets for materials and quantities projected.
- ◆ Identify market barriers.

More information: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 9: DETERMINE CONTRACT REQUIREMENTS**

Negotiate beforehand:

Although contract negotiations may not occur until after a disaster occurs, it is important to select the type of contract that meets your needs best. This is also the mechanism through which a jurisdiction can ensure that diversion activities are included in the program.

Sample contracts:

Chapter 5, Contracts, contains excerpts from five contracts that have incorporated diversion language into the contract provisions.

- 1) City of Santa Clarita cleanup contract, 1994 Northridge Earthquake;
- 2) City of Oakland, Master Contract, 1991 Firestorm;
- 3) City of Los Angeles, Building Demolition contract, 1994 Northridge Earthquake;
- 4) City of Los Angeles, Unit Price Contract, 1994 Northridge Earthquake; and
- 5) USEPA contract for Household Hazardous Waste collection, 1995 floods.

In addition several sample contracts are included as attachments to Chapter 5, which can be used as a guide. They include sample contracts developed by FEMA .

Review existing contracts:

A jurisdiction should review its existing contracts to determine if there are any relevant provisions dealing with disaster debris or if the contract can be used as the vehicle to provide emergency cleanup work, either as written or modified.

More information: Refer to Chapter 5, Contracts, for more specific information.

☐ **STEP 10: DEVELOP TRACKING/DOCUMENTATION SYSTEM**

Document: Documentation is necessary to verify the program is being implemented in the fashion envisioned and to make program changes as needed. Moreover, adequate documentation is necessary to obtain reimbursement from FEMA.

FEMA policy: FEMA policy states that it will reimburse the least cost method of waste removal. However, if a jurisdiction can document that there is an existing policy or that the governing body has taken official action that mandates recycling or diversion, FEMA may be more likely to reimburse costs for locally approved procedures. A debris management plan

Furthermore, it is possible to recycle at a lower cost than disposal as proven by documentation by the City of Los Angeles following the Northridge earthquake (see Attachment B in Chapter 6).

The City of Los Angeles used an authorization letter to encourage haulers to take the materials to a recycling facility.

Documentation: Document time and cost expenditures. This is extremely important if a jurisdiction anticipates reimbursement from the Federal Emergency Management Agency. Comprehensive documentation of all expenditures related to addressing a disaster is necessary for reimbursement through FEMA.



STEP 11: DEVELOP PUBLIC INFORMATION STRATEGY/PROGRAM

- Advertise program:** Notify residents of program. This point may seem obvious, but there are several potential barriers to disseminating information on a curbside pickup program. A City's public outreach program should evaluate all forms of media including: newspaper ads, radio public service announcements, and television public access stations. Be aware of communities where multiple language ads will be necessary. Also, be prepared to pay for the ads. The City of Los Angeles was quoted a price of \$16,000.00 for a one-day quarter-page ad in the *Los Angeles Times*.
- Coordinate with OES:** Also be sure to coordinate the dissemination of information on diversion programs with your public information office and the Office of Emergency Services public information effort.
- Public ed:** Finally, the jurisdiction must determine the length of the curbside program, as well as the method of informing the public. If the program is to cease on a given date, adequate resources must be spent informing the public.
- Additional thought must be given towards any non-English speaking sectors of the jurisdiction, as well as the visually or physically impaired, to inform them of the program implementation and conclusion. For example, the City of Los Angeles used the Good Year Blimp to advertise the end of their curbside program. (See Chapter 17 for a case study of the City of Los Angeles' Northridge earthquake response for more information).
- More information:** Also, refer to Chapter 10, Household Hazardous Waste Collection Program.

☐ **STEP 12: DEVELOP METHODS TO ENCOURAGE DIVERSION**

Incentives:

Institute incentive for haulers. City staff indicated that one of the most difficult aspects of the program was both educating the haulers on the preferable sites to haul the material to and then ensuring that they followed through on the instructions.

As indicated above, the City placed recycling facilities in higher preference to mixed disposal facilities. However, the recycling facilities may not be the most preferable facility in the hauler's mind.

The hauler may have chosen a facility based on distance, familiarity, or absence of truck scales on route rather than recyclability of material or disposal cost as the City bore the brunt of these costs.

The City developed a training guide entitled "Northridge Earthquake Recycling Requirements for C-21 Contractors," which lists the City's requirements, materials specifications, and recycling and disposal facilities. All haulers were given the manual and trained on program guidelines.

See page: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 13: DEVELOP MONITORING AND ENFORCEMENT PROGRAM**

Monitoring: Even with the training, the City needed to constantly police the haulers to verify that the loads were taken to the preferred locations. An attempt was made to designate a primary disposal/recycle location on a ticket to be presented to the facility operator.

If the load was rejected, or the facility was full, the ticket would be stamped at the facility and the load was to be taken to the next facility listed.

This was only partially successful. In some cases the drivers changed the location listed on the tickets avoiding the hierarchy altogether. This process is also very resource intensive, as inspectors are needed at each cleanup site prior to hauling to mark the tickets.

Incentive: In conclusion, the City felt the method that had the most potential for success in ensuring that the high priority facilities (recycling) were visited first, involved some sort of incentive program.

If the drivers received some sort of perk for adhering to the criteria, more material would be recycled, and a great deal of money would be saved in the form of reduced tipping fees and reduced staff time dedicated towards policing cleanup crews and haulers.

Inspectors: Continual oversight by inspectors is needed. As discussed in the previous item, oversight is needed to ensure that the hauler goes to the preferred facility. Additional oversight is needed for the crews loading the debris to ensure that material separation techniques are used.

Inspectors, or incentive programs, are needed to ensure that full loads are taken to the processing facilities rather than half empty trucks. Under the City's initial system, there was no incentive for a hauler to completely fill a truck before going to the disposal/recovery facility. The haulers were paid for their time rather than by weight. The City determined that it was necessary; otherwise, there would be

no incentive to haul low-density materials such as wood and insulation.

Case Studies:

Refer to Chapter 17 for two case studies of curbside collection of disaster debris after the 1994 Northridge earthquake--City of Los Angeles and City of Santa Clarita.

☐ **STEP 14: PREPARE FINAL REPORT**

Why needed: A final report of program activities and results may be required for FEMA reimbursement for diversion programs implemented. This report allows jurisdictions to evaluate program success and areas for improvement and is crucial for future disaster debris planning purposes.

Major topics: The Final Report's major topic areas are presented below as an example of the types of program information that should be collected.

- ◆ program goals;
- ◆ operational approach;
- ◆ facilities used;
- ◆ program costs for tipping fees: recycling and disposal facilities; contractors (C-21 for debris removal/loading, and trucking);
- ◆ landfill space savings;
- ◆ tonnage and % of materials recycled and disposed of;
- ◆ recycling rates by material type;
- ◆ program costs by ton - recycling compared to disposal;
- ◆ demonstrated program effectiveness; and
- ◆ lessons learned and areas for improvement.

ATTACHMENTS

A. Curbside Pickup Site Identification

REFERENCES

- ◆ *Debris Removal Guidelines for State and Local Officials*, FEMA, DAP-15 (Draft) Dec. 1991 Modified.
- ◆ Emergency Managers Mutual Aid Program, Draft, Governor's Office of Emergency Services.
- ◆ *Northridge Earthquake Recycling Requirements for C-21 Contractors*, City of Los Angeles, Environmental Affairs Department.

CHECKLIST

CHAPTER 8

CURBSIDE PICKUP PROGRAM

STEP 1: Identify/quantify material

- ◆ Identify types of materials.
- ◆ Estimate quantities of materials.
- ◆ Include materials generated as a result of disaster recovery.
- ◆ Consider setting up pilot program to determine material types/quantities.

STEP 2: Determine processing and facility needs

- ◆ Identify the following:
 - ◆ operations/facilities in the area that process construction and demolition waste;
 - ◆ facilities' current processing abilities and future needs;
 - ◆ landfills practicing material separation on-site;
 - ◆ material recovery facilities in the area;
 - ◆ temporary storage areas at facilities, public/private land;
 - ◆ markets for collected materials;
 - ◆ processing requirements for materials based on their end-uses.
- ◆ List reuse facilities to establish their roles and types of materials accepted.

STEP 3: Identify labor and equipment needs

- ◆ Estimate labor needs.
- ◆ Estimate equipment needs.
- ◆ Survey equipment on hand and that which can be borrowed from other jurisdictions or private businesses.
- ◆ Document businesses involved in demolition, waste transport and handling operations.
- ◆ Negotiate agreement for special labor: California Conservation Corps or State Employment Development Department.
- ◆ Activate/establish Mutual Aid Agreement.

STEP 4: Secure program funding in advance

- ◆ Plan ahead by identifying local or private funds to start-up program
- ◆ General Fund;

- ◆ private funds; and
- ◆ loan.

STEP 5: Select method to locate curbside waste

- ◆ Develop method to identify and map sites and plan routes
- ◆ Geographic Information System;
- ◆ canvassing streets;
- ◆ hotline.
- ◆ Prepare collection plan including haulers and/or demolition contractors, routes, recycling facilities.
- ◆ Divide area into zones and assign subcontractors.
- ◆ Obtain all necessary forms from property owners (right of entry, waiver release, waiver of encroachment permit).
- ◆ Determine if air or water quality permits are required.

STEP 6: Determine method of implementation

- ◆ Decide who will implement the program: government employees/contractor.
- ◆ Decide material types to be collected.
- ◆ Decide how will material be collected: source separated, commingled, bins.
- ◆ Prepare training booklet for contractor staff; train contractors.
- ◆ Provide plan for property owners who choose to clean up independently .

STEP 7: Identify temporary storage areas

- ◆ Determine need for temporary storage areas.
- ◆ Develop criteria for siting temporary storage or pre-staging areas.
- ◆ Make a list of all possible sites: public and private.
- ◆ Consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency.
- ◆ Identify permit and environmental compliance requirements and time needed to process.
- ◆ Decide the type and level of environmental assessment and monitoring needed to be performed at site.
- ◆ Negotiate in advance the use or lease of public or private land.
- ◆ Develop Site Operation Plan
- ◆ Develop Site Restoration Plan.

STEP 8: Identify/establish markets for collected materials

- ◆ Determine end-uses and market specifications for disaster debris.
- ◆ List the local brokers and processors, materials they handle, and end-uses.
- ◆ Identify processing requirements for selected end-uses.
- ◆ Identify potential markets.
- ◆ List the existing markets.
- ◆ List the recycling businesses in nearby Recycling Market Development Zone(s); the secondary materials they accept and process; end-products.
- ◆ List local, state, and national waste exchanges.
- ◆ Identify potential city/county projects for materials collected.
- ◆ Identify market barriers.

STEP 9: Review contract requirements

- ◆ Determine contract to be used: Model Time & Material, Model Lump Sum, Model Unit Price, Alternate Bid.
- ◆ Ensure diversion language is included.
- ◆ Include non-compliance fee language.

STEP 10: Develop tracking/documentation system

- ◆ Develop tracking mechanism: facility, tonnage and materials disposed/diverted.
- ◆ Verify disposal/diversion: weight tickets, authorization letter, facility billing; contractor weekly load verification.
- ◆ Train inspectors to monitor contractor compliance.
- ◆ Institute non-compliance fee.

STEP 11: Develop public information program/strategy

- ◆ Advertise program to public and contractors through media
- ◆ evaluate all forms of media: newspaper, radio public service announcements, public access television;
- ◆ consider coordinating outreach programs with nearby jurisdictions also affected by the disaster.
- ◆ Target materials to non-English speaking sectors of the population as well as the visually or physically impaired.

STEP 12: Develop methods to encourage diversion

- ◆ Institute incentives for haulers.
- ◆ Develop a training guide outlining materials specifications, facilities.
- ◆ Consider instituting through contracts non-compliance fees for not recycling.

STEP 13: Develop monitoring and enforcement program

- ◆ Dedicate sufficient resources to ensure program success (e.g. an adequate number of inspectors is assigned to the program).
- ◆ Develop a non-compliance fee.
- ◆ Establish guidelines for compliance and incorporate as part of contract.
- ◆ Develop methods to monitor and enforce. recycling/diversion guidelines.

STEP 14: Prepare final report

- ◆ May be required for FEMA reimbursement for diversion programs implemented.
- ◆ Allows jurisdictions to evaluate program success and areas for improvement.
- ◆ Crucial for future disaster debris planning purposes.
- ◆ Major topic areas
 - ◆ program goals;
 - ◆ operational approach;
 - ◆ facilities used;
 - ◆ program costs for tipping fees: recycling and disposal facilities; contractors (C-21 for debris removal/loading, and trucking);
 - ◆ landfill space savings;
 - ◆ tonnage and % of materials recycled/disposed of;
 - ◆ recycling rates by material type;
 - ◆ program costs by ton - recycling compared to disposal;
 - ◆ demonstrated program effectiveness; and
 - ◆ lessons learned and areas for improvement.